

CHAPTER 8 SAFETY AND HEALTH CONSIDERATIONS

8-1. Introduction.

a. This chapter discusses the safety and health considerations for planning and executing a RCWM response project.

b. Safety is the primary consideration in all RCWM response actions. Detailed safety and health practices and procedures must be developed and implemented at each site to provide proper control of and protection against the unique safety hazards associated with specific on-site activities. All RCWM response activities will be planned and conducted in accordance with the requirements of this section, will be thoroughly coordinated with the OE MCX, and will include participation of explosives safety technical personnel.

8-2. Policy. All USACE and contractor elements will conduct RCWM response projects in compliance with regulations and guidance publications referenced below. Additionally, safety and occupational health documentation will comply with other applicable federal, state, and local safety and occupational health requirements.

8-3. Personal Safety Considerations. The most important consideration throughout all aspects of RCWM response activities performed by USACE and its contractors is the safety and health of the public and on-site personnel.

a. Safety of Government Personnel. All government personnel assigned as OE Safety Specialists will meet the prerequisites identified in EP 1110-1-18.

b. Safety of Contractor Personnel. All contractor personnel will be trained and experienced in their assigned positions in accordance with the guidance provided in paragraph 8-5 of this chapter. The contractor will ensure that their work force complies with OSHA requirements and will assign a Site Safety and Health Officer for each project. The Site Safety and Health Officer will be corporately responsible for the health and safety environment of the contractor's work force. The OE safety specialist will provide safety oversight to ensure the contractor's compliance with established policies and procedures. The contractor will be required to prepare a SSHP and present site-specific training to the work force prior to work beginning; attendance at the training will be documented.

8-4. Work Standards and Personnel Qualifications. The OE MCX has set forth Work Standards and Personnel Qualifications for UXO contractors working on UXO contracts for the USACE. The standards are the minimum only and may be expanded at any time; however, they will not be relaxed

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without the approval of the OE MCX/Safety Manager. These standards are available on the OE MCX website at <http://www.hnd.usace.army.mil/oew>. These standards are also provided in EP 1110-1-18.

8-5. Training.

a. Personnel. All workers associated with a non-stockpile RCWM site will be trained commensurate to the site hazards and the associated tasks. This training will meet the requirements of 29 CFR 1910.120(e), and to be published in ER 385-1-95. They will receive updated training on an annual basis. The training requirements listed below are chemical agent specific requirements, required by Army regulation.

(1) Site Workers. Site workers will be trained in accordance with all applicable Army regulations. Agent related site-specific training will be conducted by a qualified instructor from either the contractor or TEU. This training will be completed during the site-specific training that is conducted prior to work beginning on-site. In addition, all workers initiating the job will participate in the pre-operational survey and the supervisors initiating the job will participate in the tabletop exercise.

(2) Medical Support Personnel. Because of the uniqueness of chemical agent, all medical support personnel must be trained in chemical casualty care. Presently, this service is provided through a PMCD contractor. The training takes approximately one day and should be coordinated through the USAESCH OE-MCX.

(3) Fire and Police Support. Army regulations require any member of the police and/or fire department who is a member of the initial response force must be trained in self-aid, buddy aid, emergency first aid, individual protection, casualty decontamination and evacuation procedures.

b. Site-Specific Training.

(1) Generally, on non-stockpile sites, the following information is covered during the site-specific training prior to the start of work on site. A qualified instructor (qualified in accordance with 29 CFR 1910-120(e)(5)) from either the contractor or SBCCOM will provide the training. This training is conducted annually for long term projects. Employees will be trained in the following items at the beginning of each project:

- (a) Names of persons and alternates responsible for site safety.
- (b) Safety, health, and other hazards known to be on the site.
- (c) Use of PPE.

- (d) Work practices to minimize hazards.
- (e) Safe use of equipment and other controls on site.
- (f) Medical surveillance requirement.
- (g) Decontamination procedures (if necessary).
- (h) An emergency response plan.
- (i) Confined space entry procedures (if applicable).
- (j) A spill containment program (if applicable).

(2) Additional site-specific training covering site hazards, procedures, and all contents of the approved SSHP will be conducted by the UXO Safety Officer (UXOSO). This training will be provided for all on-site employees, including those assigned only to the Support Zone, prior to the commencement of work; for visitors prior to entering the site; and on a continual basis.

(3) Toxic Chemical Munition Training. Any training necessary to address toxic chemical munitions will be completed during site-specific training.

c. Mandatory Training. The initial training required prior to performing work on a RCWM site may include: 40-hour training; 24-hour training; on-site management and supervisor training; workers outside of controlled area training; noise training; site visitor training; and office and administrative worker training. Additional information on these training requirements is provided in EP 1110-1-18 and the requirements to be published in ER 385-1-95.

d. Refresher Training. All employees requiring 40-hour or 24-hour training, as well as managers and supervisors, will receive eight hours of refresher training annually on the topics specified in paragraph 8-5b, ensuring the requirements of 1910.120(e) and the requirements to be published in ER 385-1-95 are met. All on-site personnel will have current OSHA training certification upon reporting for work. Employees will also critique any incidents that have occurred in the past year that can serve as training examples of related work, and other relevant topics.

e. First Aid and CPR Training.

(1) When a medical facility or physician is not accessible within five minutes to a group of two or more employees for the treatment of injuries, at least two employees on each shift will be qualified to administer first aid and CPR.

(2) Employees designated as responsible for rendering first aid or medical assistance will be:

(a) Included in their employer's blood-borne pathogen program in accordance with 29 CFR 1910.1030.

(b) Instructed in the sources, hazards, and avoidance of blood-borne pathogens.

(c) Provided with, use, and maintain PPE when appropriate for rendering first aid or other medical assistance to prevent contact with blood or other potentially infectious materials.

f. Training Certification. Each employee successfully completing the training and field experience requirements specified above will be certified as having successfully completed the necessary training. A written certificate will be given to each person certified. The certificate or a copy of the certificate will be maintained at the project site as proof of the completion of the training. Any person not certified is prohibited from engaging in on-site OE response operations.

g. Documentation. All health and safety training, including the names of employees trained, the duration of the training, the contents of the training courses, and the dates of training will be documented and appended to the SSHP. Records must be kept to ensure identified personnel receive appropriate initial health and safety training and annual refresher courses. Response action contractors and visitors must provide evidence of health and safety training before site entry is authorized.

8-6. Team Training and Pre-Start Exercises.

a. In order to have a project run smoothly and to ensure that all of the different contractors and agencies involved understand their portion of the project, the proper chain of command for operations and safety and health, and the proper lines of communication, the project team will be tested during two pre-start exercises. These exercises include the table top exercise and the pre-operational survey (Pre-Op). In order to prepare for the table top and the pre-op, all on-site personnel will conduct training together, typically of five (5) days duration. This training will be conducted one week prior to the scheduled table top and pre-op and will be run by the USAESCH OE Safety Specialist. All equipment must be on site during this training. All of the other site-specific training will be completed prior to the start of this training. It is the responsibility of each organization to ensure that when their workers are rotated out during a project that the information gained during these exercises is communicated to the new site personnel.

b. Table Top Exercise.

(1) A table top exercise is required by Army regulation to be completed prior to the start of a chemical agent project. According to the Interim Guidance, the table top exercise will be conducted by

the MACOM with overall responsibility for the activity. USAESCH will conduct the table top exercise as requested by the USACE district. Participants will include all on-site support agencies and any local responders that are supporting the project.

(2) The table top exercise is generally conducted in a “conference room” and usually lasts between two and six hours, depending on the project size and interest. This open discussion will take place in a non-threatening environment. It is an exercise utilizing simulations to conduct drills of emergency response to different RCWM accident and incident scenarios. The purpose of the table top exercise is to ensure the effectiveness of the responses and to identify deficiencies or omissions in the emergency response process. It is also used to establish continuity and coordination among response agencies.

c. Pre-Operational Survey.

(1) A Pre-Operational Survey is required by Army regulation to be completed prior to the start of a chemical agent project. According to the Interim Guidance for BWM and RCWM, the pre-op will be conducted by the Army Safety Office, using a team of chemical agent subject matter experts. Responsibility for the pre-op may be delegated to the MACOM with overall responsibility for the project activity.

(2) The pre-op is conducted on-site and usually lasts between three and four days. It is a survey to ascertain that personnel, equipment and materials required for work activities are on site, that personnel are trained and qualified to perform their work assignments, and that work procedures and safety controls are appropriate for the tasks. The survey is based on the approved Safety Submission, personnel interviews, records review, equipment inventories and the performance of site personnel during simulated work scenarios. Appendix B includes an example of the Pre-Operational Survey Checklist.

8-7. Personal Protective Equipment (PPE).

a. On non-stockpile RCWM sites there is a potential to encounter both industrial chemicals and chemical agents. Because of the high probability of encountering industrial chemicals on these sites, the use of National Institute for Occupational Safety and Health (NIOSH)-certified commercial, full-facepiece respirator (commercial respirator) and commercially available protective clothing is recommended for USACE contractors.

b. Respiratory Protection.

(1) In 1996 the DACS-SF developed and issued a policy to allow for the use of commercial respirators for projects where the potential for both industrial and chemical agents exist. This policy is

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contained in a memorandum dated 30 Dec 1998, titled "Revised Policy for the Use of NIOSH-Certified Commercial Respirator with Chemical Agents." A copy of this memorandum is contained in Appendix C.

(2) The intent of this policy is to provide more options to address the wide mix of chemical hazards on and off military installations. The respirators are intended to be worn in areas where exposure to vapor or liquid agent is possible but not expected. ECBC maintains the file of respirator test results. Before testing, the user should contact ECBC to determine what testing has been done or if the product has complete test results.

(3) Approval Process. Each requestor is required to forward all test data and the "use scenario" to HQDA Office of the Deputy Assistant for Army Safety (ODASAF) through the USAESCH OE Design Center. The HQDA ODASAF will forward the request to the CASHPAC that has a working group that reviews the submitted information. It is important to allow six to eight weeks, at a minimum, for CASHPAC to review and comment on the submittal.

c. Chemical Protective Clothing (CPC).

(1) In 1994, the Army Safety Office developed a program to allow the use of commercially available chemical protective clothing (Level A) during toxic chemical operations. In January 1998, DA Safety extended this program to include commercially available Level B suits. A copy of these test matrices is located in Appendix D.

(2) Before a USACE contractor can use these suits on a RCWM site, the test data along with the use scenarios as described in the written procedures must be submitted to DA Safety through USAESCH.

(3) Approval Process. Each requestor is required to forward all test data and the "use scenario" to HQDA ODASAF, through USAESACH OE Design Center. The HQDA ODASAF will forward the request to the CASHPAC which has a working group that reviews the submitted information. It is important to allow six to eight weeks, at a minimum, for CASHPAC to review and comment on the submittal.

8-8. Medical Support and Surveillance.

a. Medical Support.

(1) Army regulations require on-site medical support and a Memorandum of Agreement (MOA) with a local hospital during any routine or emergency operation which could result in the exposure of

personnel to chemical agent. For medical planning purposes, the number and types of casualties anticipated should be determined by the most probable event.

(2) The degree of medical support for each site will be determined in consultation with the SBCCOM Occupational Medicine Officer. Coordination with the medical support providers is the responsibility of the USACE district. If the district is not able to provide this support the district commander must send a letter to USAESCH to request this support. Information as to the details of the medical support will be addressed in this section of the SSHP.

(3) Requirements.

(a) On-Site Support. In general, as a minimum, a State or National Registry of Emergency Medical Technician-certified paramedic, with special training in chemical warfare agent casualty care, will be available at each site during site characterization, excavation, transportation and/or disposal operations, along with a vehicle designated for use in patient transport. A MOA or a contract which contains all of the wording contained in the MOA will be developed and signed by both the medical provider and the USACE district commander prior to the start of intrusive work on site.

(b) Medical Treatment Facility. A MOA will be developed with a medical treatment facility that is capable of handling site injuries.

(4) Training. Army regulation requires that the medical Support Personnel be trained in the Management of Chemical Warfare Agent Chemical Casualty Care. Presently, this training is conducted through a contract that the PMCD has in place. The USACE district will coordinate this training through the USAESCH Safety Office. It is recommended that this training be scheduled as far in advance of the project as possible.

(5) Memorandum of Agreement. A MOA (or Contract) will be developed with each medical treatment facility and ambulance/paramedics provider to ensure that the appropriate outside resources will be available in the event of a chemical accident or incident. The MOA should describe in detail the types of chemical materiel to which workers might be exposed, the type of training to be provided to the health care providers, the agency responsible for providing this training and the frequency of the refresher training. The MOA should also specify how casualties will be transported to local hospitals, by whom and any contingency plans for casualty evacuation. If propositioned antidotes are required for effective treatment, provisions for this should be addressed.

b. Medical Surveillance.

(1) The contractor and the government PM will ensure that all persons entering a RCWM exclusion zone meet the following requirements. If the contractor or government agencies believe that

the requirement does not apply to a specific task or site, a negative declaration will be included in the SSHP.

(2) Medical examination required by DA Pam 40-173, Category B, as a minimum, if the potential for mustard exists. (See http://www.usapa.army.mil/pdffiles/p40_173.pdf).

(3) Medical examination required by DA Pam 40-8 (see special provisions for contractor personnel, DA Pam 40-8, Chapter 4, Paragraph 4-8b), if the potential for nerve agent exposure exists. (See http://www.usapa.army.mil/pdffiles/p40_8pdf).

(4) Requirements in AR 40-5, Preventive Medicine, Chapter 5, paragraph 5-10 and DA Pams 40-8 and 40-173, Chapter 4, paragraph 407 and Appendix D, for the treatment of occupational illnesses and injuries.

(5) Requirements of AR 40-5, Chapter 5, paragraph 5-20 for reproductive hazard surveillance.

(6) Medical evaluation of workers in accordance with 29 CFR 1910.120 and/ or 1910.134, as applicable. Contractors will maintain on-site a file containing all on-site personnel's certificate of current (within 365 days) medical evaluation.

8-9. Heat and Cold Stress Monitoring. Heat and cold stress monitoring protocols, as appropriate, will be described in detail. Work/rest schedules will be determined based upon ambient temperature, humidity, wind speed (wind chill), solar radiation intensity, duration and intensity of work and protective equipment ensembles. Minimum required physiological monitoring protocols which will affect work schedules will be developed. In cases where impervious clothing is worn, the NIOSH/OSHA/USCG/EPA "Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities" protocol for prevention of heat stress will be followed and heat stress monitoring will commence at temperatures of 70° Fahrenheit. Where impervious clothing is not worn, the American Conference of Governmental Industrial Hygienists (ACGIH) heat stress standard (threshold limit value - TLV) will be used. For cold stress monitoring to help prevent frostbite and hypothermia, the ACGIH cold stress standard will be referenced and followed, as a minimum.

8-10. Personnel and Equipment Decontamination. The contractor will develop and specify decontamination procedures in accordance with 29 CFR 1910.120, AR 385-61 and DA Pam 385-61 for personnel, PPE, monitoring instruments, sampling equipment, and heavy equipment. Decontamination procedures will address specific measures to ensure that contamination is confined to the work site. Necessary facilities and their locations, detailed standard operating procedures, frequencies, supplies, and materials to accomplish decontamination of site personnel and to determine adequacy of equipment decontamination will be discussed.

8-11. Emergency Response and Contingency Procedures (On-site and Off-site). An Emergency Response Plan as required by 29 CFR 1910.120 and DA Pam 50-6 will be developed and implemented. As a minimum it will address the following elements:

- a. Pre-emergency planning and procedures for reporting incidents to appropriate government agencies for potential chemical exposure, personal injuries, fire/explosions, environmental spills and releases, discovery of radioactive materials.
- b. Personnel roles, lines of authority, communications.
- c. Posted instructions and list of emergency contacts: physician, nearby notified medical facility, fire and police departments, ambulance service, state/local/federal environmental agencies, Certified Industrial Hygienist (CIH), and CO.
- d. Emergency recognition and prevention.
- e. Site topography, layout and prevailing weather conditions.
- f. Criteria and procedures for site evacuation (emergency alerting procedures/employee alarm system, emergency PPE and equipment, safe distance, place of refuge, evacuation routes, site security and control).
- g. Specific procedures for decontamination and medical treatment of injured personnel.
- h. Route maps to nearest pre-notified medical facility.
- i. Criteria for initiating community alert program, contacts and responsibilities.
- j. Critique of emergency responses and follow-up.
- k. Material Safety Data Sheets (MSDS) for each hazardous substances anticipated to be encountered on site will be made accessible to site personnel at all times

8-12 Standing Operating Procedures, Engineering Controls and Work Practices.

- a. Work Week. OE personnel involved in performing OE field operations will be limited to a 40-hour week, either four-10 hour days or five-eight hour days, unless a waiver is approved by the USAESCH Safety Manager. Two consecutive work weeks will be separated by 48 hours of rest.
- b. OE Team Composition and Roles.

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(1) A full time UXOSO will be present during all field operations on a RCWM project site due to the complex hazards posed by RCWM.

(2) A Quality Control Specialist (QCS) will be used for all RCWM field operations.

8-13. Logs, Reports, Record Keeping, Accident Reporting.

a. Accident Reporting.

(1) All accidents will be reported and investigated to determine the cause of the accident and develop controls to prevent recurrence. Notification and reporting will be in accordance with AR 385-40, Accident Reporting and Records; USACE Suppl 1 to AR 385-40; and EM 385-1-1, Safety and Health Requirements Manual.

(2) The contractor's UXOSO is responsible for accident reporting. For contracts under the supervision of the district, accidents will be reported to the district safety office with an informational copy to be forwarded to the OE MCX. USACE district personnel will report through the OE MCX and Command channels to CESO.